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Jia-Sheng Heh

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EXAMINER

HOLMES, MICHAEL B

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/753,469

**Applicant(s)**

HEH, JIA-SHENG

**Examiner**

Michael B. Holmes

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.



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## Examiner's Detailed Office Action

### Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. The invention as disclosed in claims 1-52 are rejected under 35 U.S.C. 101 as being non-statutory subject matter.

3. Regarding claims 1-40, which involves a knowledge map, knowledge instructions, and a knowledge interpreter. These claims "descriptive material, per se," are directed to nonstatutory subject matter which consists of data structures and computer programs which impart functionality when employed as a computer component.

5. Regarding claims 41-48, involves preparing a knowledge map, interpreting a knowledge instructions, and operating the attribute, which in and of itself does not produce any result that is a practical application. The claim appears to be than an abstract idea not tied to the real-world, and as such fails to provide a practical application and is insufficient to establish a real world "tangible" result.

4. Regarding claims 49-51, constitute software modules devoid of any apparent hardware, and therefore are computer programs, per se, e.g., "functional descriptive material." Moreover, the computer programs are not embodied on an appropriate computer-readable storage medium. Furthermore, as stated above, the program as claimed does not produce any tangible result that has

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a practical application. Merely manipulating data not tied to the real-world is not patent eligible subject matter, *see In re Warmerdam*, 31 USPQ2d, 1354.

5. Regarding claim 52, which involves receiving knowledge instruction, one or more knowledge interpreters, outputting an knowledge operation, which in and of itself does not produce any result that is a practical application. The claim appears to be nothing more than software modules and as such fails to provide a practical application and is insufficient to establish a real world “tangible” result.

6. Devoid of such, applicant’s claimed invention is an abstract idea e.g., a computational model or a mathematical manipulation of a function or equation. A process that merely manipulates an abstract idea or performs a purely mathematical algorithm is non-statutory despite the fact that it might inherently have some usefulness. *see In re Sarkar*, 588 F.2d at 1335, 200 USPQ at 139, wherein the court explained why this approach must be followed:

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variables expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a “process” under 101. Consideration of whether the substitution of specific values is enough to convert the disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law.

7. A claim is limited to a practical application when the method or system, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. *See AT & T*, 172 F.3d at 1358, 50 USPQ2d at 1452. *See* MPEP § 2106(IV) The claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.” *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02. Remember, the claims define the property rights provided by a patent, and thus require careful scrutiny. Therefore, it is not enough to set forth invention in the specification. The claims must also reflect the scope and breath of applicant’s invention. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-

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551(CCPA 1969). The situation in this application appears to be more difficult since it does not appear that the practical application is contained within the specification.

## Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 1-3 & 6-52 are rejected under 35 U.S.C. 102(e) as being anticipated by *Wu et al.* (USPN 7,099,727 B2).

Regarding claim 1. *Wu et al.* describes an e-brain comprising:

a knowledge map configured in a hierarchy form with each node thereof being a knowledge symbol having a knowledge attribute table for recording one or more attributes each containing an attribute name and an attribute value; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]

a knowledge instruction including a knowledge operator and one or more parameters determined by the attribute name and attribute value, respectively; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34] and

a knowledge interpreter corresponding to the attribute name for interpreting the attribute value.

[see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]

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Regarding claims 2. *Wu et al.* describes the e-brain of claim 1, wherein the knowledge map is provided by a server.

[see FIG.1, C 4, L 35-52]

Regarding claim 3. *Wu et al.* describes the e-brain of claim 1, wherein the knowledge map is derived from an algorithm. [see C 7, L 27-38]

Regarding claim 6. *Wu et al.* describes The e-brain of claim 1, wherein the knowledge map is stored in a file.

[see C 2, L 55-65]

Regarding claim 7. *Wu et al.* describes the e-brain of claim 1, wherein the knowledge map is stored in a memory.

[see C 7, L 27-38]

Regarding claim 8. *Wu et al.* describes the e-brain of claim 1, wherein the knowledge map is provided by accessing a hyperlink. [see C 5, L 51-67]

Regarding claim 9. *Wu et al.* describes the e-brain of claim 1, wherein the knowledge interpreter is implemented by a program. [see C 7, L 27-38]

Regarding claim 10. *Wu et al.* describes the e-brain of claim 1, wherein the knowledge interpreter is implemented by a single chip. [see C 7, L 27-38]

Regarding claim 11. *Wu et al.* describes the e-brain of claim 1, wherein the plurality of knowledge symbols includes a carrier symbol. [see FIG. 2, C 3, L 66 to C 4, L 8]

Regarding claim 12. *Wu et al.* describes the e-brain of claim 11, wherein the knowledge instruction is executed for searching the knowledge map for a second carrier symbol in accordance with the first carrier symbol. [see C 6, L 29-44]

Regarding claim 13. *Wu et al.* describes the e-brain of claim 1, wherein the plurality of knowledge symbols includes a conceptual symbol. [see FIG. 2, item 44]

Regarding claim 14. *Wu et al.* describes the e-brain of claim 13, wherein the knowledge instruction is executed for searching the knowledge map for a carrier symbol in accordance with the conceptual symbol. [see C 6, L 29-44]

Regarding claim 15. *Wu et al.* describes the e-brain of claim 1, wherein the plurality of knowledge symbols includes a carrier symbol vehicling a conceptual symbol for calculating a knowledge content of the carrier symbol or a second carrier symbol. [see FIG. 3, C 4, L 15-34]

Regarding claim 16. *Wu et al.* describes The e-brain of claim 1, wherein the attribute further includes a context. [see FIG. 3, C 4, L 15-34]

Regarding claim 17. *Wu et al.* describes The e-brain of claim 16, wherein the attribute value is operated under the context. [see FIG. 3, C 4, L 15-34]

Regarding claim 18. *Wu et al.* describes The e-brain of claim 17, wherein the operation of the attribute value is selected from the group composed of computation, reasoning, problem-solving, description and presentation. [see FIG. 3, C 4, L 15-34]

Regarding claim 19. *Wu et al.* describes The e-brain of claim 1, wherein the knowledge map includes one of the plurality of knowledge symbols derived from a knowledge operation of another one or more knowledge symbols thereof. [see C 3, L 47-65]

## Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4 & 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

*Wu et al.* (USPN 7,099,727 B2) in view of *Collins et al.* (USPN 6,768,982 B1).

*Wu et al.* has been discussed above and does not teach the limitations of claims 4 & 5, respectively, However, *Collins et al.* discloses the limitations of claims 4 & 5.

Regarding claim 4. *Collins et al.* discloses the e-brain of claim 1, wherein the knowledge map is derived from a genetic algorithm. Regarding claim 5. The e-brain of claim 1, wherein the knowledge map is stored in a neural network. [see C 8, L 22-33] It would have been obvious at the time the invention was made to a persons having ordinary skill in the art to combine *Wu et al.* with *Collins et al.* because as is known in the art, "knowledge" includes a body of truth, information, expertise or principals obtained through the application of reasoning to facts or data. Knowledge is used for some task, e.g., to modify behavior based upon information and experience. A common view of knowledge is that it includes more value than mere data and information. [see C 1, L 41-47]



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Regarding claim 20. *Wu et al.* describes a data structure comprising:

a knowledge map including a plurality of knowledge symbols configured in a hierarchy form with each node thereof corresponding to one of the plurality of knowledge symbols; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]  
each of the plurality of knowledge symbols having a knowledge attribute table for recording one or more attributes each representing one set of signified description thereof; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34] and  
each of the plurality of nodes in the hierarchy form having a unique addressing expression for the corresponding knowledge symbol thereto. [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]

Regarding claims 21. *Wu et al.* describes the data structure of claim 20, wherein each of the plurality of knowledge symbols includes a string, a numeral, a graphic, an image, a visual information, an animation or any representative symbol referring to other object or intention on a computer or internet, or a combination thereof. [see FIG. 3, C 4 L 15-34]

Regarding claim 22. *Wu et al.* describes the data structure of claim 20, wherein each of the plurality of attributes has an attribute name and an attribute value. [see FIG. 3, C 4 L 15-34]

Regarding claim 23. *Wu et al.* describes the data structure of claim 20, wherein the plurality of knowledge symbols includes at least one knowledge symbol appears on two or more of the plurality of nodes in the hierarchy form. [see FIG. 3, C 4 L 15-34]

Regarding claim 24. *Wu et al.* describes the data structure of claim 20, wherein the plurality of knowledge symbols includes at least one knowledge symbol being a carrier symbol. [see FIG. 2, C 3, L 66 to C 4, L 8]

Regarding claim 25. *Wu et al.* describes the data structure of claim 24, wherein the carrier symbol vehicles one or more knowledge symbols thereon. [see FIG. 3, C 4, L 15-34]

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Regarding claim 26. *Wu et al.* describes the data structure of claim 24, wherein the carrier symbol serves as a guiding unit for guiding a switching between the plurality of knowledge symbols on the knowledge map. [see FIG. 3, C 4, L 15-34]

Regarding claim 27. *Wu et al.* describes the data structure of claim 20, wherein the plurality of knowledge symbols includes at least one knowledge symbol being a conceptual symbol. [see FIG. 2, item 44]

Regarding claim 28. *Wu et al.* describes the data structure of claim 27, wherein the conceptual symbol includes at least one signifier. [see FIG. 2, item 44]

Regarding claim 29. *Wu et al.* describes the data structure of claim 20, wherein the knowledge map has a title. [see FIG. 1 & FIG. 2 & FIG. 3]

Regarding claim 30. *Wu et al.* describes the data structure of claim 29, wherein the title is a root name of the hierarchy form. [see FIG. 1]

Regarding claim 31. *Wu et al.* describes the data structure of claim 20, wherein each of the plurality of knowledge symbols has a syntagmatic chain with an up-knowledge symbol thereof. [see FIG. 2, C 3, L 25-33 & C 3, L 66 to C 4, L 8]

Regarding claim 32. *Wu et al.* describes the data structure of claim 31, wherein the syntagmatic chain is inclusion, inheritance, amount or location. [see C 4, L 53 to C 5, L 11]

Regarding claim 33. *Wu et al.* describes the data structure of claim 32, wherein the amount or location is depicted in the knowledge attribute table. [see C 3, L 47-65]

Regarding claim 34. *Wu et al.* describes the data structure of claim 22, wherein one of the plurality of knowledge

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symbols has its attribute value with a signified description representing a combinational relationship among two or more of the plurality of knowledge symbols. [see FIG 2, item 44]

Regarding claim 35. *Wu et al.* describes the data structure of claim 34, wherein the combinational relationship has a specific form representing a knowledge type. [see FIG. 2, item 44]

Regarding claim 36. *Wu et al.* describes the data structure of claim 35, wherein the knowledge type is a combination of words and sentences, an equation or a diagram. [see FIG. 2, item 44]

Regarding claim 37. *Wu et al.* describes the data structure of claim 20, wherein each of the plurality of attributes has a context. [see FIG. 3, C 4, L 15-34]

Regarding claim 38. *Wu et al.* describes the data structure of claim 20, wherein each of the plurality of attributes has a corresponding knowledge processing unit. [see C 4, L 35 to C 5, L 11]

Regarding claim 39. *Wu et al.* describes the data structure of claim 20, wherein each of the plurality of knowledge symbols has a unique addressing expression corresponding thereto. [see FIG. 2 & FIG. 3]

Regarding claim 40. *Wu et al.* describes the data structure of claim 39, wherein the unique addressing expression forms a tree structure. [see FIG. 2 & FIG. 3]

Regarding claim 41. *Wu et al.* describes a knowledge processing method comprising the steps of:

preparing a knowledge map configured in a hierarchy form with each node thereof being a knowledge symbol having a knowledge attribute table for recording one or more attributes each containing an attribute name and an attribute value; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]

interpreting a knowledge instruction including a knowledge operator and one or more parameters determined by the attribute name and attribute value, respectively; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34] and

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operating the attribute value under a context. [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]

Regarding claim 42. *Wu et al.* describes the method of claim 41, further comprising searching the knowledge map for a first carrier symbol, a second carrier symbol or a conceptual symbol in accordance with the first carrier symbol. [see C 6, L 29-44]

Regarding claim 43. *Wu et al.* describes the method of claim 41, further comprising searching the knowledge map for a first conceptual symbol, a second conceptual symbol or a carrier symbol in accordance with the first conceptual symbol. [see C 6, L 29-44]

Regarding claim 44. *Wu et al.* describes the method of claim 41, further comprising calculating a knowledge content of a carrier symbol in accordance with a conceptual symbol. [see FIG. 3, C 4, L 15-34]

Regarding claim 45. *Wu et al.* describes the method of claim 41, wherein the step of operating the attribute value includes a computation, a reasoning, a problem-solving, a description or a presentation. [see FIG. 3, C 4, L 15-34]

Regarding claim 46. *Wu et al.* describes the method of claim 41, wherein the step of operating the attribute value includes generating a new knowledge symbol from one or more of the plurality of knowledge symbols. [see C 3, L 34-65]

Regarding claim 47. *Wu et al.* describes the method of claim 46, further comprising arranging the new knowledge symbol on the knowledge map. [see FIG. 2 & FIG. 3]

Regarding claim 48. *Wu et al.* describes the method of claim 41, further comprising modifying or canceling one or more of the plurality of knowledge symbols on the knowledge map. [see C 3, L 34-45]

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Regarding claim 49. *Wu et al.* describes a knowledge instruction comprising:

a knowledge operator; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34] and

one or more parameters following behind the knowledge operator

for being operated by the knowledge operator. [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34]

Regarding claim 50. *Wu et al.* describes the knowledge instruction of claim 49, wherein the knowledge operator

corresponds to a knowledge type. [see FIG. 2, item 44]

Regarding claim 51. *Wu et al.* describes the knowledge instruction of claim 50, wherein the one or more parameters

are attribute values of a knowledge symbol having an attribute name corresponding to the knowledge type. [see

C 3, L 34-45]

Regarding claim 52. *Wu et al.* describes a knowledge processor comprising:

an input for receiving a knowledge instruction; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34 & C 6, L 5-44]

one or more knowledge interpreters connected to the input with each knowledge interpreter thereof interpreting an

attribute value for a knowledge symbol of a knowledge type; [see FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34] and

an output connected to the one or more knowledge interpreters for outputting a knowledge operation result. [see

FIG. 2 & FIG. 3, C 3, L 25 to C 4, L 34 & C 6, L 5-44]

## Correspondence Information

13. Any inquires concerning this communication or earlier communications from the examiner should be directed to Michael B. Holmes, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-3686 or facsimile transmission (571) 273-3686 or email [Michael.holmesb@uspto.gov](mailto:Michael.holmesb@uspto.gov).

If you need to send an Official facsimile transmission, please send it to (703) 746-7239.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, Anthony

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Knight, may be reached at (571) 272-3687.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

***Michael B. Holmes***

Patent Examiner

Artificial Intelligence

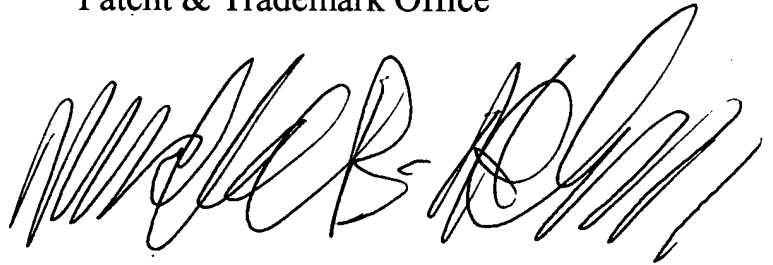
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United States Department of Commerce

Patent & Trademark Office

*Wednesday, December 6, 2006*

*MBH*

A handwritten signature in black ink, appearing to read "Michael B. Holmes", with a stylized flourish at the end.